REMARKS

Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Applicants are pleased to note the Examiner indicated that claims 2, 3, 10, 11, 18, 21, 22 and 26 are allowable if rewritten in independent form including all of the limitations of the base claims.

Claims 1-26 are pending in this application. Claim 26 has been amended to depend from claim 25.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84 (p)(5). The applicant has amended the specification. Accordingly, Applicants have amended the specification to include the reference signs included in the drawings but not mentioned in the specification. The reference signs not mentioned in the description M1, M2, P1 and P2 correspond to alignment marks. One of ordinary skill in the art would recognize M1, M2 to be reticle alignment marks and P1 and P2 to be wafer alignment marks. The reference signs PM, PW and BP correspond respectively to first positioning means, second positioning means and base plate. One of ordinary skill in the art would also recognize PM and PW to be positioning means of respectively mask table MT and wafer table WT. Similarly, one of ordinary skill in the art would recognize that the object tables MT, WT are movable relative to base plate BP. Applicants submit that no new matter is introduced by this amendment.

Therefore, Applicants respectfully request that the objection to the drawings be withdrawn.

Claim Rejection – 35 USC § 102

Claims 1, 4-9, 12-17, 19 and 23-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over MacDonald *et al.* (US Patent No. 5,142,132) in view of Rawlings (US Patent No. 4,196,972). Applicants respectfully traverse this rejection for at least the following reasons.

The Office Action contends that MacDonald *et al.* teaches a lithographic projection apparatus comprising all the elements recited in claim 1. The Office Action, however, concedes that MacDonald *et al.* fails to teach that the actuator is operable to exert a force having a component in a direction parallel to the surface figure of the reflective multilayer.

The Office Action contends that Rawlings teaches that it is desirable to have actuators

operable to exert a force having a component in direction parallel to the surface of a reflective layer for the purpose of avoiding transmission of reaction forces normally attributed to forces acting normal to the surfaces. Applicants respectfully disagree.

Contrary to the Office Action contention, MacDonald *et al.* does not disclose, teach or suggest a reflective multilayer. Indeed, MacDonald *et al.* merely teaches a mirror having a single top sheet (see col. 2, lines 33-34 in MacDonald *et al.*) that has a reflection surface on its outer side. The reflection sheet is coated with a film for minimum absorption at the chosen wavelength (see col. 4, lines 52-59 in MacDonald *et al.*). Thus, the reflective surface of MacDonald et al. is not a multilayer reflective surface, as that would be understood by one of ordinary skill in the art.

Moreover, contrary to the Office Action contention, Rawlings simply teaches a configuration control apparatus to mechanically distort a deformable specimen held by a supporting structure by applying equal and opposite moments (with translation of links 20" and 22") to the specimen through posts (such as post 12" in Figure 3) extending perpendicularly from the surface of the specimen 10". Rawlings uses this configuration to avoid transmission of the reaction forces which otherwise would have been transmitted through the supporting structure when applying forces normal to a surface of the specimen. Additionally, the configuration control apparatus of Rawlings is simply used to deform specimens such as antennae in communication and relatively large optical mirrors thus the use of mechanical assemblies to distort the mirrors. These mechanical assemblies are not suited for deforming a multilayer reflective surface for application in EUV lithography because they do not achieve the deformable tolerances, i.e., nanometer to sub-nanometer accuracy, required in EUV lithography.

Furthermore, Applicants submit that in Rawlings' apparatus the force generated to distort the specimen is normal to the surface of the specimen even though the apparatus applies moments to the post which in turn transmits the force to bend the specimen. Applicants submit that the generation of the moment (force couple) is merely used as a means to avoid applying the "bending" force directly to the surface of the specimen. As stated in Rawlings, this allows avoiding transmission of the reaction forces (due to flexing of the specimen) through the supporting structure. As stated in page 6 of the specification, a given force exerted parallel to the plane of the reflector effects a smaller deformation of the surface figure than the same force exerted perpendicularly. This allows for a much more exact control of the surface figure, with reduced risk of over-deforming the reflector.

Therefore, contrary to the Office Action contention, Rawlings does not disclose, teach or suggest anything about an actuator which is operable to exert a force having a component in a direction parallel to the surface of the surface figure of the reflective multilayer, as recited in claim 1. Moreover, Rawlings does not disclose, teach or suggest at least one actuator controllable to adjust a surface figure of the reflecting multilayer by exerting a force having a component in a direction parallel to a surface figure of the reflective multilayer, as recited in claim 25.

Consequently, for at least the above reasons, neither MacDonald *et al.* nor Rawlings disclose, teach or suggest, alone or in combination, the subject matter recited in claims 1 and 25. Therefore, Applicants respectfully submit that claims 1 and 25, and 4-9, 12-17, 19, 23 and 24 which are directly or indirectly dependent from claim 1, are patentable. Thus, it is respectfully requested that the rejection of claims 1, 4-9, 12-17, 19 and 23-25 under § 103 (a) be withdrawn.

Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over MacDonald *et al.* (US Patent No. 5,142,132) in view of Rawlings (US Patent No. 4,196,972) and further in view of Chapman *et al.* (US Patent No. 5,986,795). Applicants respectfully traverse this rejection for at least the following reasons.

Claim 20 is directly dependent from claim 1. Therefore, for at least the reasons provided above with regard to claim 1, Applicants submit that claim 20 is patentable over MacDonald *et al.* in view of Rawlings. Furthermore, Chapman *et al.* does not overcome the deficiencies noted above for MacDonald and Rawlings. Specifically, Chapman *et al.* fails to disclose, teach or suggest anything about an actuator which is operable to exert a force having a component in a direction parallel to the surface of the surface figure of the reflective multilayer, as recited in claim 1. In fact, Chapman clearly shows that the deforming force is applied normally to the surface of the reflective surface 111 with actuators 105 (see Figures 1-3 and col. 3, lines 22-30 in Chapman). In this regard, it would be improper to combine Chapman with any reference showing a parallel application of force as Chapman teaches away from other than application of normal forces.

Consequently, none of MacDonald *et al.*, Rawlings and Chapman *et al.*, alone or in combination, disclose, teach or suggest the subject matter recited in claim 20.

Therefore, Applicants respectfully submit that claim 20 is patentable and respectfully request that the rejection of claim 20 under § 103 (a) be withdrawn.

CONCLUSION

In view of the foregoing, the claims are now in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to contact the undersigned at the telephone number listed below.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

Pillsbury Winthrop LLP

By: _____

Robert C. Perez
Reg. No. 39328
Tel. No.: (703) 905-2159
Fax No.: (703) 905-2500

JSB/RCP/KG

1600 Tysons Boulevard
McLean, Virginia 22102